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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,064	09/17/2003	James P. Landers	119620-00101	3254

27557 7590 02/25/2008

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EXAMINER	
JAGAN, MIRELLYS	
ART UNIT	PAPER NUMBER
2855	
MAIL DATE	DELIVERY MODE
02/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/664,064	LANDERS ET AL.	
	Examiner	Art Unit	
	Mirellys Jagan	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *1-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

3. Claims 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,210,882 to Landers et al [hereinafter Landers] in view of U.S. Patent 5,381,229 to Murphy et al [hereinafter Murphy].

Landers discloses a method for measuring the temperature of a small volume solution, the method comprising the steps of:

providing an optical temperature sensor (178);

providing a small volume of a sample (172) contained in a closed reservoir (14);

interrogating the small volume with the sensor to obtain an output; and

converting the output of the sensor to temperature;

wherein the sample is contained in a microchip, capillary tube, microchamber, or microtiter plate; the converting step is performed by a microprocessor; the volume is about 100 pL to about 100 microliters (nanoliter range); and the sample is a DNA or protein solution (see figures 1B, 1D, 6C, 6D; column 8, lines 48-63; column 9, lines 19-37 and 49-55; column 13, line 52-column 14, line 2; column 14, lines 60-64; column 15, lines 38-52; and column 16, line 59-column 17, line 30).

Landers does not disclose the optical temperature sensor being an optical interferometric sensor using a standard curve obtained by interrogating samples at known temperatures using the sensor to convert the signal from the sensor to a temperature signal, the sensor being an extrinsic Fabry-Perot interferometer.

Murphy discloses an optical interferometric sensor as an optical temperature sensor for obtaining temperature measurements. The sensor is an extrinsic optical interferometric sensor (Fabry-Perot type, as described by applicant in figure 1 of the specification) using a microprocessor to determine temperature, the microprocessor using a standard curve (look-up table) when converting the signal from the interferometer to a temperature measurement. The standard curve correlates the sensor output to a corresponding temperature measurement. The sensor is useful for obtaining non-contact temperature measurements and is useful in a wide temperature range, e.g., up to 2000°C (see figure 3; column 5, line 35-column 6, line 9; and column 6, lines 31-50).

Referring to claim 19, it would have been obvious to a person having ordinary skill in the art at the time that the invention was made to modify the method disclosed by Landers by replacing the optical temperature sensor with an extrinsic optical interferometric sensor using a microprocessor to obtain the temperature, as disclosed by Murphy, since Murphy teaches that an extrinsic optical interferometric sensor is a useful sensor for measuring temperatures remotely and is useful in a wide temperature range.

Referring to claim 21, the standard curve of Landers and Murphy is predetermined and stored in a microprocessor memory, the curve correlating the output of the sensor with a corresponding temperature measurement. Therefore, the standard curve is obtained by interrogating samples at known temperatures using the sensor, as claimed (the temperatures of the samples must be known in order to correlate them to the corresponding sensor output in order to create the predetermined curves).

Response to Arguments

4. Applicant's arguments with respect to claims 19-24 have been considered but are not persuasive.

Applicant's arguments that Landers fails to disclose measuring the temperature of a sample in a closed reservoir with an optical interferometric sensor, as recited by claim 19, are not persuasive since Landers discloses that the sample is in a reservoir (14) that is closed (by 12) (see figure 1D). The excerpts from Landers that the Applicant relies upon, i.e., an "open reaction vessel", is merely an alternate embodiment of his invention, which was not used in the rejection of claim 19. Moreover, Landers discloses that the material of the window is transparent to

radiation so that the radiation transmits through the window and reaches the sample. Therefore, the thermo-optical sensing device does not measure the temperature of the cover plate since the window is transmissive. Because of the window's transparency, the thermo-optical device measures the temperature of the sample in the closed reservoir versus the temperature of the cover plate.

Furthermore, Applicant's arguments that Landers and Murphy do not teach measuring the temperature of a sample in a closed reservoir under a cover plate because they both measure the surface of the sample are not persuasive since the surface of the sample is the same thing as "measuring the temperature of a sample in the reservoir, as claimed.

Lastly, applicant's arguments that there is no disclosure of the use of a remote temperature sensor with the closed reservoir are not persuasive since Landers discloses that the thermo-optical sensing device is used with any of the disclosed sample containers, including the one with the window, which is made of a radiation-transmissive material so that is transparent to the thermo-optical sensing device (see column 8, lines 45-63; column 15, lines 37-43; column 16, lines 59-63).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is (571) 272-2247. The examiner can normally be reached on Monday-Friday from 12PM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gail Verbitsky/
Primary Examiner, Art Unit 2855

MJ
February 15, 2008